



Introduction to Environmental Engineering

November 27, 2006



***Todd Shrader,
Waste Treatment & Immobilization Plant
Office of River Protection***



Office of River Protection



CH2MHILL
Hanford Group, Inc.

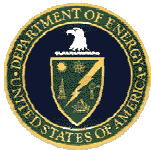


Bechtel National, Inc.



**Washington Group
International**





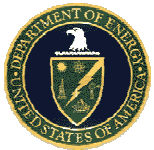
U.S. Department of Energy Nationwide Sites



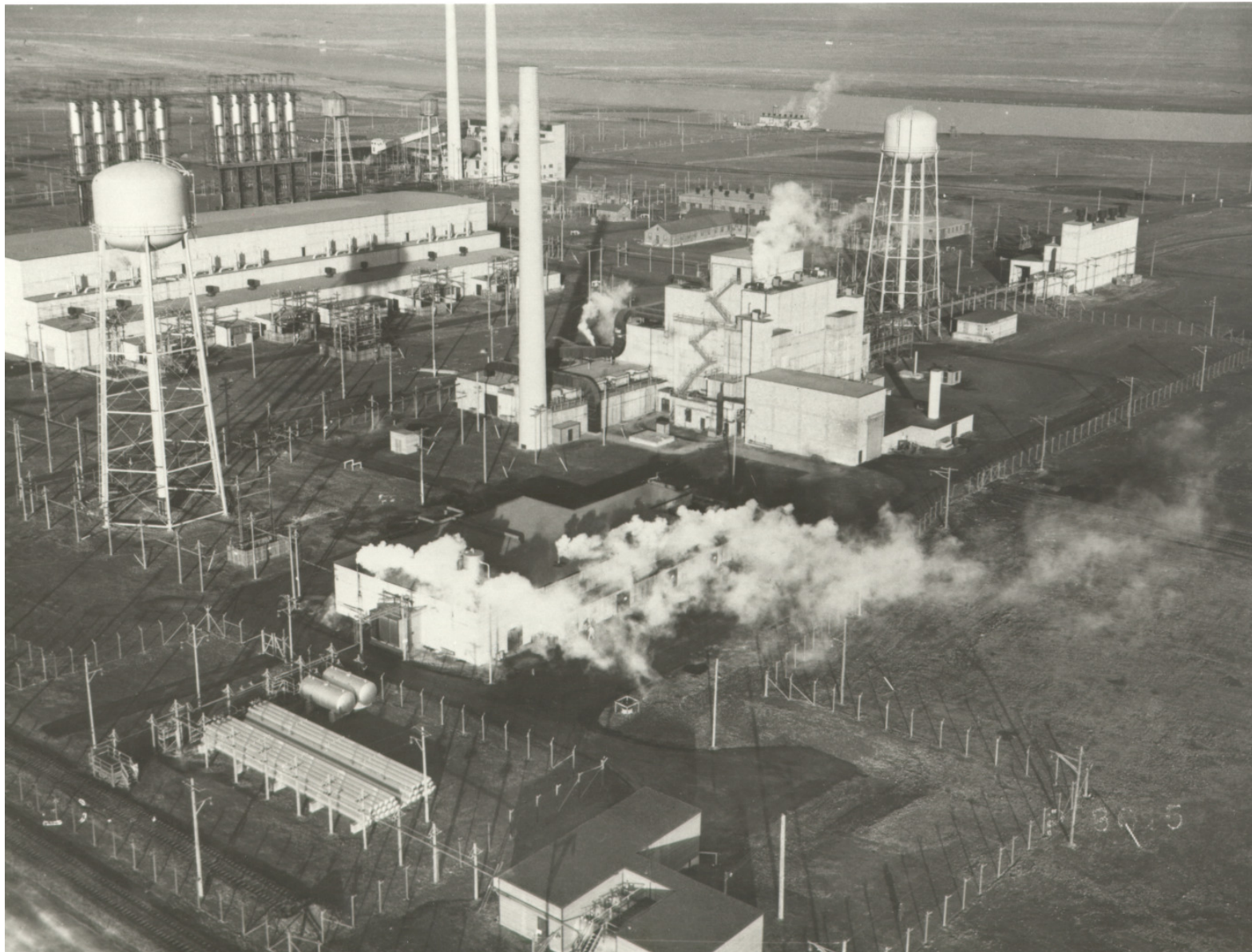


Hanford Cleanup Site





Hanford's B Reactor, as it stood in 1945





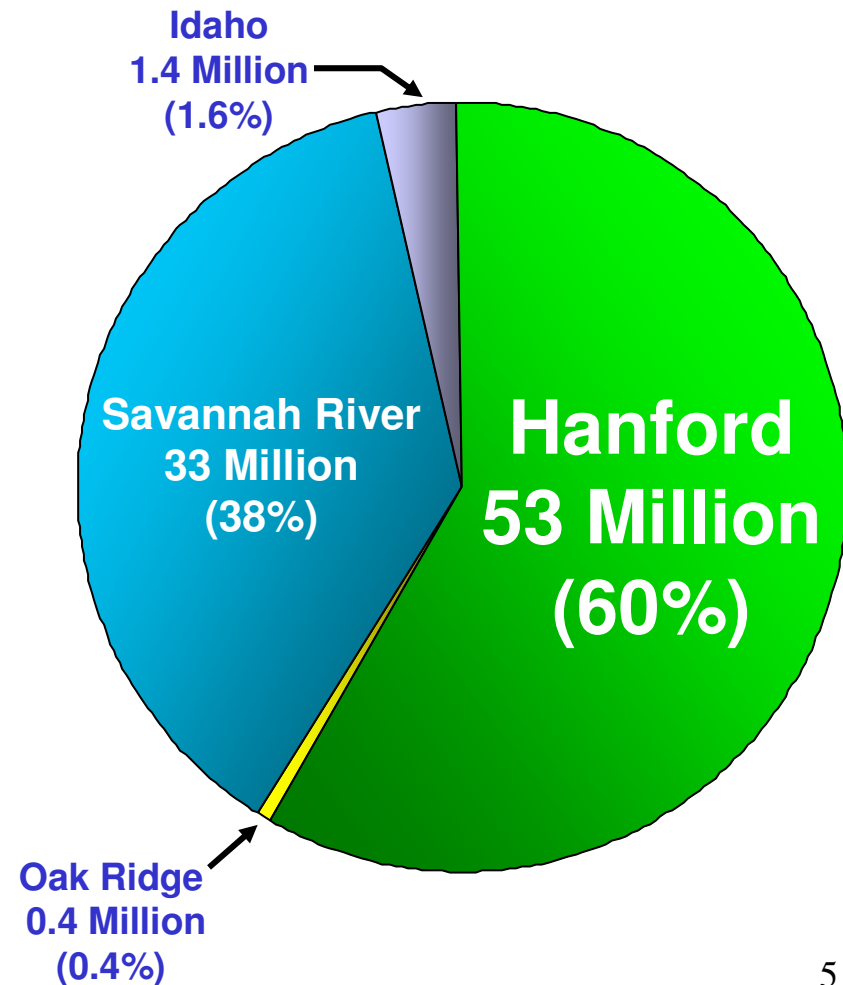
Hanford Tank Waste Cleanup Challenge



Hanford has:

- ❑ 63% of DOE tanks; 80% of DOE single-shell tanks
- ❑ 60% of DOE total tank waste
- ❑ ~194 million curies of radioactivity in tanks (148 million already removed)
- ❑ ~190,000 tons of chemicals

Total Number of Gallons in Waste Tanks at DOE Sites:



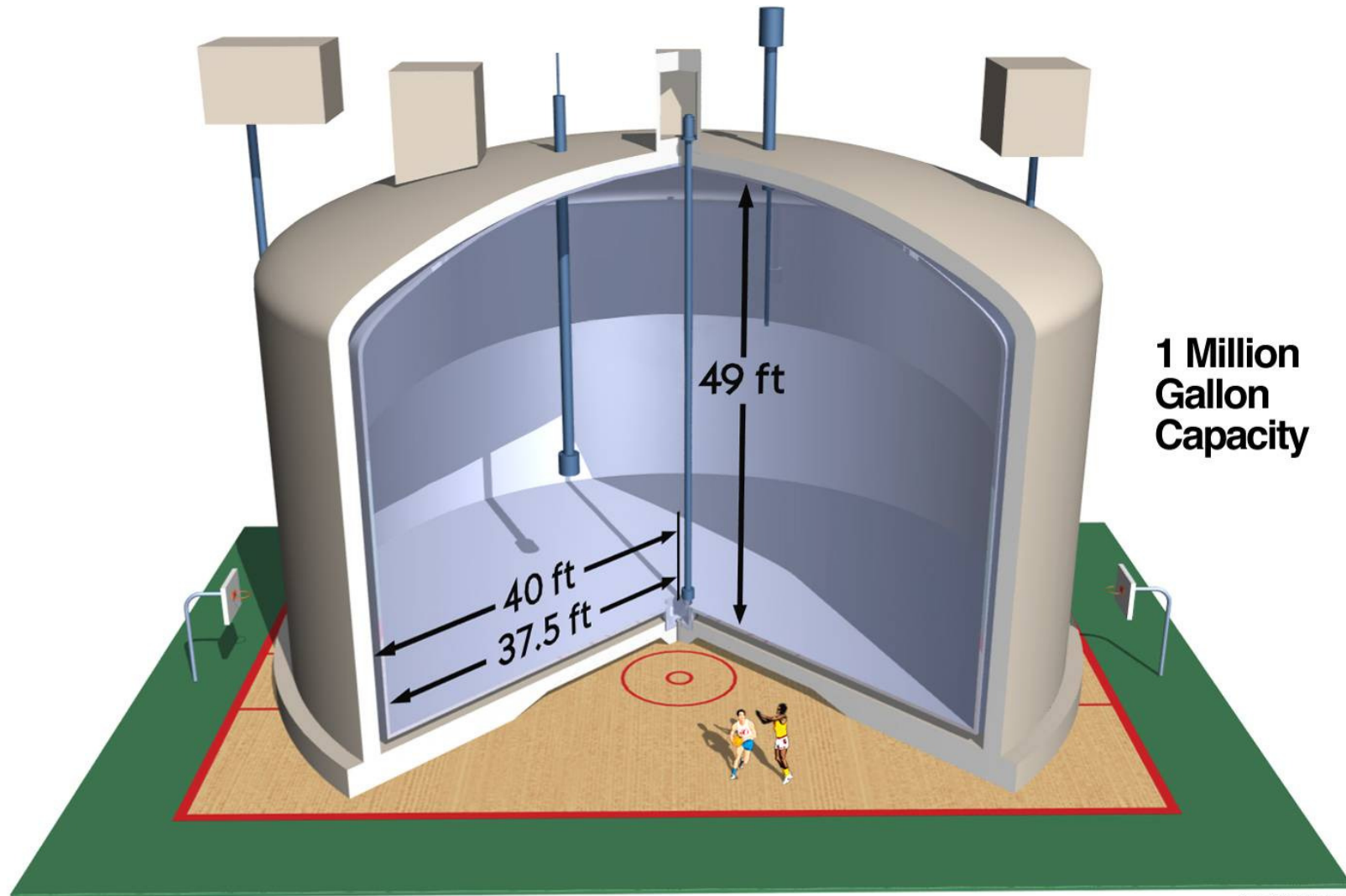


Double-Shell Tanks under construction





Double-Shell Tank



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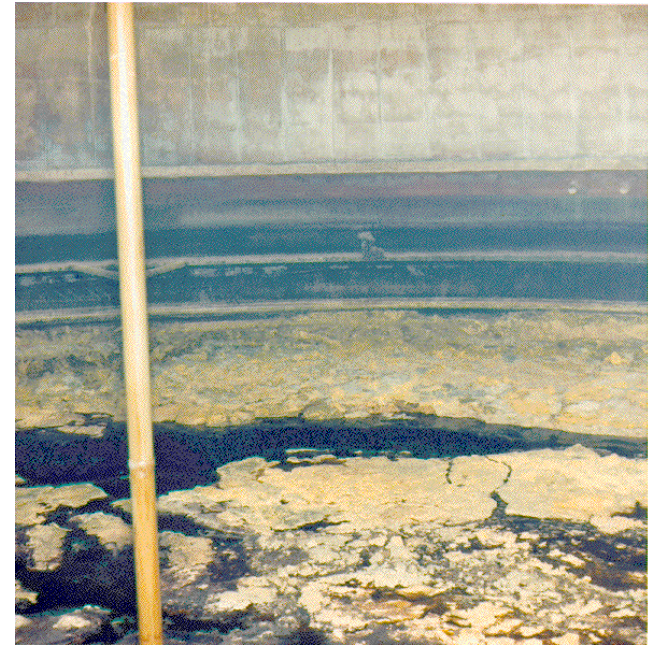




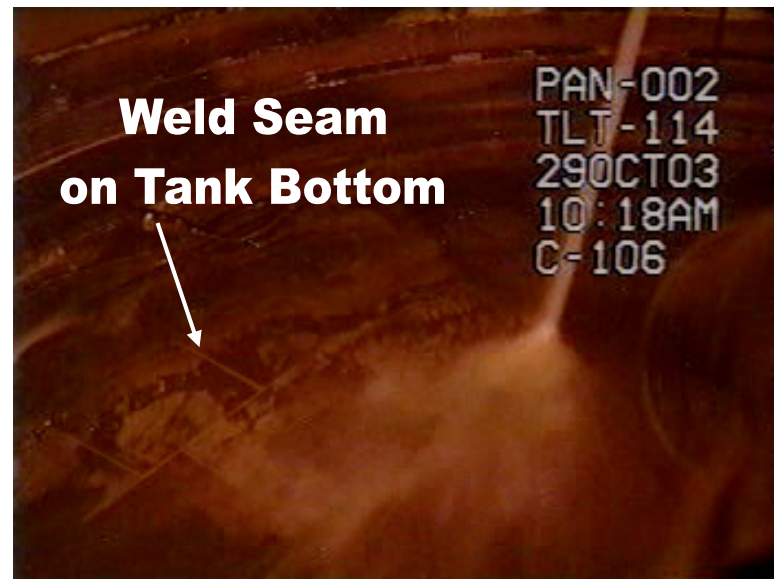
Tank Waste



Tank Filled to Dome

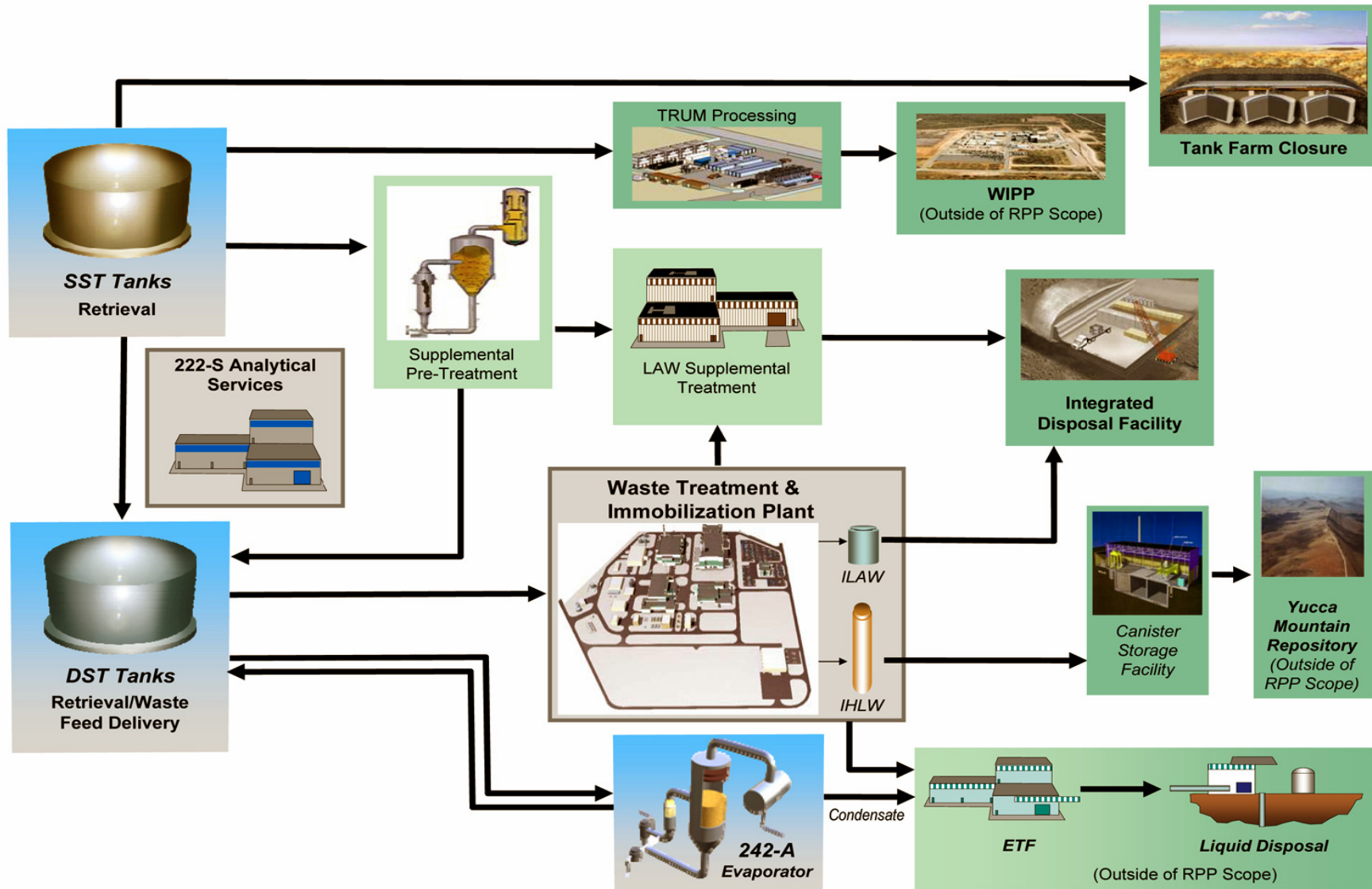


Waste inside Tank



Tank Emptied- Exposing Bottom Weld-Seams

River Protection Project Mission



CHG0310-04 Rev C.0

*A decision for disposal at the Waste Isolation Pilot Plant (WIPP) will not be made until (1) the waste meets the WIPP Waste Acceptance Criteria, with special emphasis on the waste determination as delineated in the WIPP recertification decision by the Environmental Protection Agency in March 2006; and (2) it meets the regulatory eligibility requirements for disposal as described in the WIPP Hazardous Waste Facility Permit.



Vitrified Waste Canisters/Containers

High Level Waste Canisters

- 2' X 14.5'
- 6,600 pounds of glass
- Temporarily stored in Hanford's Canister Storage Building until national repository built

Low Activity Waste Containers

- 4' X 7.5'
- 13,000 pounds of glass
- Stored at Hanford's Central Plateau





WTP Facilities



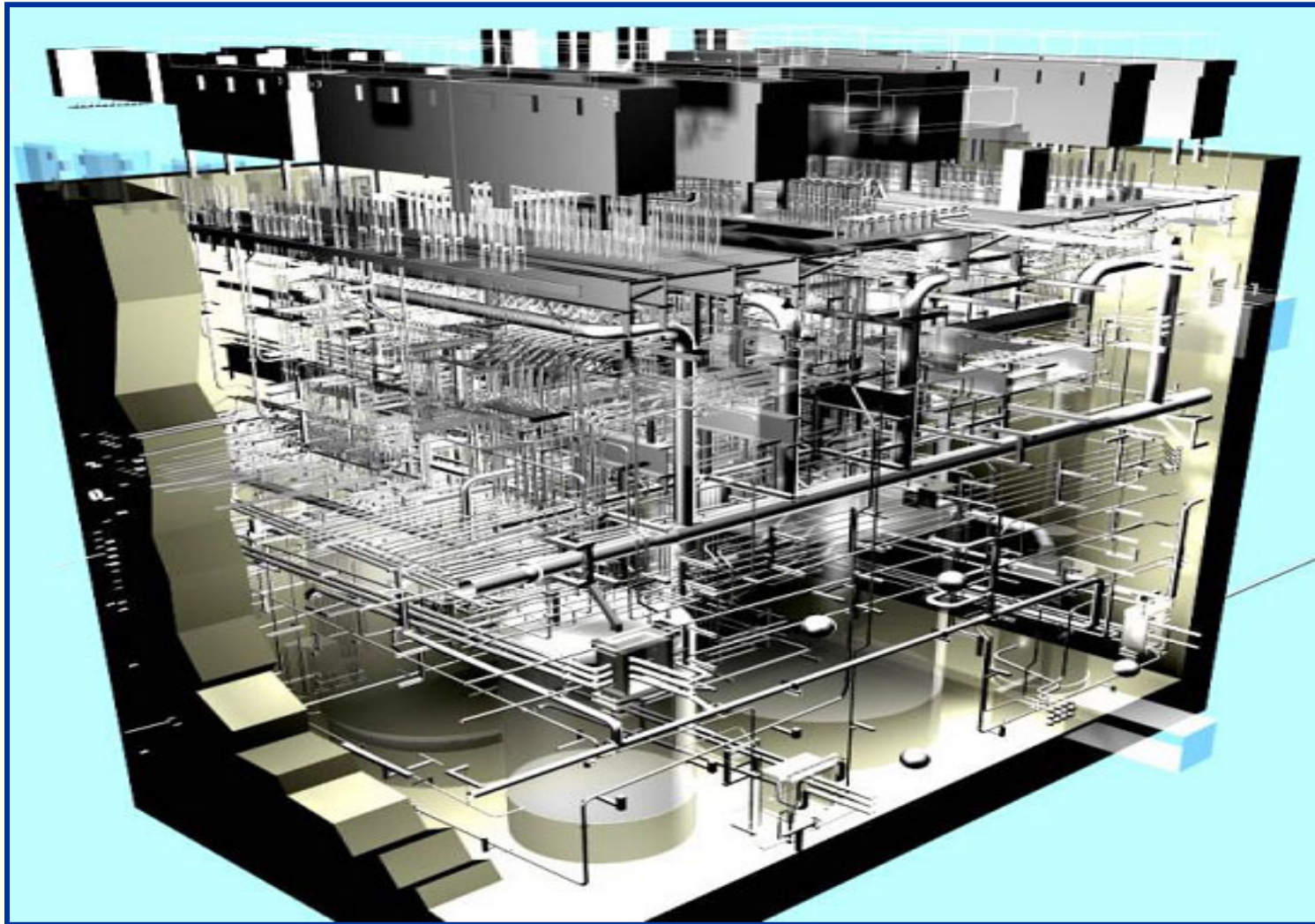


Vessels and Pulse Jet Mixers





Black Cell Pipe Module





Actual Construction of Black Cell Pipe Module





Raising stack



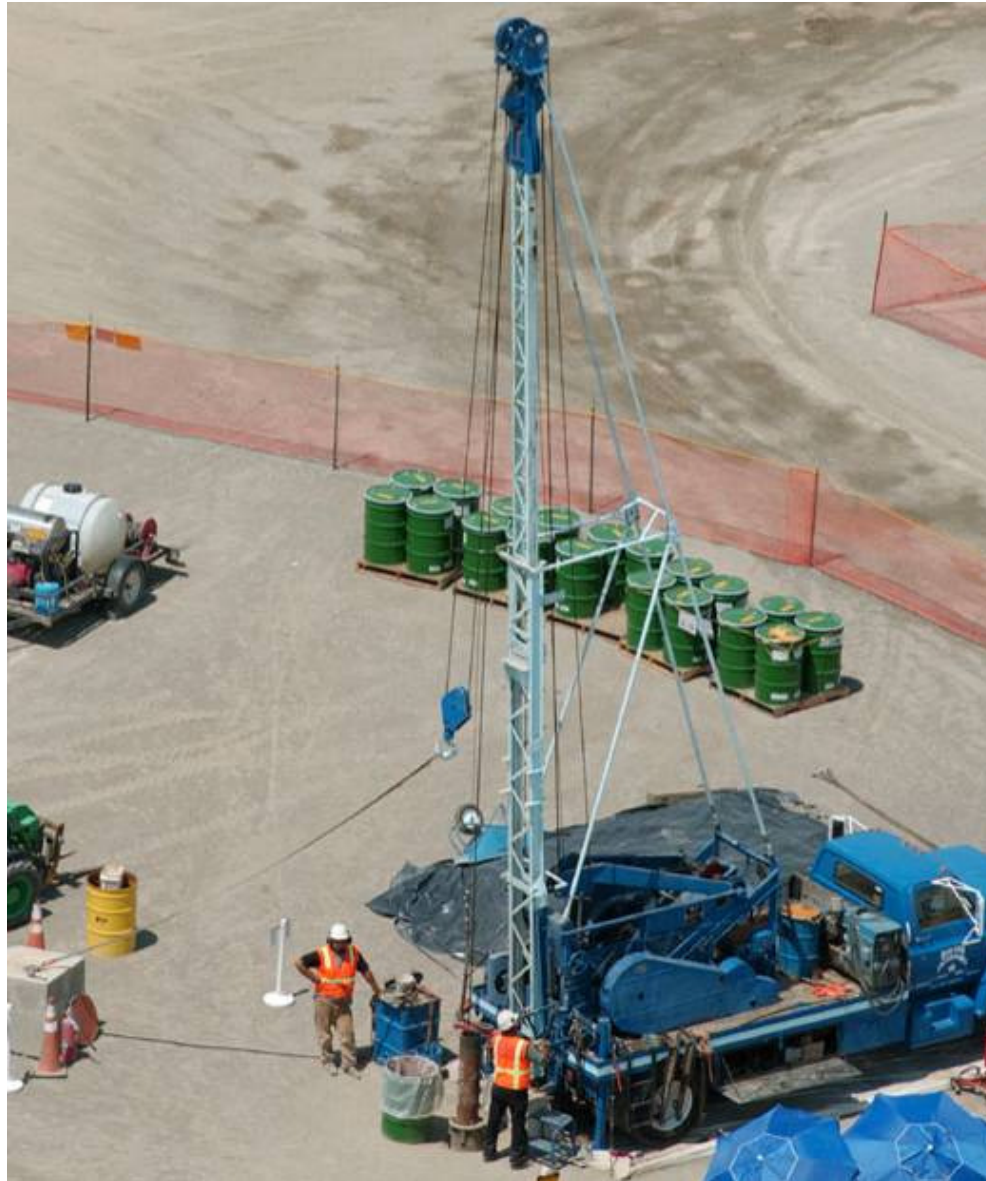


Prepping roof





Borehole drilling on WTP site for seismic analysis





Rebar reinforcement at LAB Facility





Water Treatment Building Tanks





Cooling Tower Facility

